

FACTSHEET

Wildlife Services

United States
Department of
Agriculture

Animal and
Plant Health
Inspection
Service

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The Livestock Protection Collar

Coyotes are the leading cause of predation losses in the sheep and goat industry. The livestock protection collar (LPC) is a wildlife damage management tool used by the Wildlife Services (WS) program of the U.S. Department of Agriculture's (USDA) Animal and Plant Health Inspection Service (APHIS) to protect sheep and goats in fenced pastures from depredating coyotes. The collar is the most selective method available to manage coyote predation on goats and sheep and can only be used by specially certified LPC applicators.

The LPC consists of a bladder filled with a 1 percent solution of Compound 1080 (sodium fluoroacetate) and attached to Velcro™ neck straps. This collar is attached to the neck of sheep and goats. When attacking livestock, coyotes frequently bite a sheep's or goat's throat where the toxicant-filled rubber bladder is positioned. One advantage of using the LPC is that only the coyote that is actually attacking the sheep or goat is killed. Other coyotes that may not be killing livestock are unaffected.

The LPC is registered by the Environmental Protection Agency (EPA), and WS personnel who use them must be certified through the State pesticide regulatory agency. LPC applicators must follow all label directions and use restrictions set forth by the EPA.

The collar is one of many tools available to WS for predator management. WS employees consider all methods in deciding how to solve a specific damage situation with the goal of developing the most cost-efficient and biologically sound management plan.

LPC Mode of Operation

When a coyote attacks a collared animal and bites the collar, the coyote receives a dose of toxicant in its mouth. The median toxicant dose received by attacking coyotes is approximately 0.65 mL of

Compound 1080 solution, or 6.5 mg of sodium fluoroacetate (the active ingredient).

Within 2 to 9 hours of receiving a dose through the mouth, the coyote will die a painless death from cardiac failure or central nervous system failure. The average coyote dies about 4.8 hours after puncturing a collar.

Environmentally Safe

Sodium fluoroacetate is the sodium salt of fluoroacetic acid and a naturally occurring compound in the environment. It is a chemically stable, nonvolatile compound and is relatively insoluble in most organic solvents.

Should sodium fluoroacetate spill during a predator attack, the compound is degraded by soil microorganisms. Accumulation of the toxicant in plants is limited, as plants produce enzymes capable of degrading sodium fluoroacetate.

The toxic contents of LPC's are dyed yellow and easily detected when spilled. Contaminated soil can be scooped up with a shovel according to the directions on the pesticide label. However, should a spill go undetected, the toxicant will be degraded in the soil.

Nontarget Hazards

WS employees use their expertise in animal behavior patterns and biology to determine the risk to nontarget animals. WS employees recommend using LPC's only where the risks to nontarget animals are negligible.

Secondary poisonings do not occur because the bodies of poisoned coyotes contain only nontoxic, trace levels of the toxicant. In research conducted by WS, scavenger species were given tissues from coyotes killed with sodium fluoroacetate to eat and showed no negative effect.

No known nontarget poisonings have resulted from the use of LPC's containing sodium fluoroacetate. Animal species vary widely in their response to sodium fluoroacetate, with primates and birds the least sensitive and carnivores the most susceptible. Fish show no sensitivity to the toxicant.

Livestock carcasses contaminated with toxicant on the wool or hair near punctured collars may pose a risk to scavengers. However, in research studies with dogs, skunks, magpies, and eagles that were allowed to feed on contaminated carcasses, these species were not adversely affected because they would not eat the contaminated wool or hair.

Wildlife Services Program

A Federal service program that shares costs with cooperators, WS is authorized by Congress to manage wildlife damage as stated in the Animal Damage Control Act of March 2, 1931.

The employees of WS recognize that wildlife is an important public resource greatly valued by the American people, and they conduct their wildlife damage management programs accordingly.

Additional Information

For more information about this and other WS programs, or to find out how to request assistance from your WS State office, contact the WS Operational Support Staff at (301) 734-7921 or write to:

USDA, APHIS, WS
4700 River Road
Unit 87
Riverdale, MD 20737

You can also find information on WS programs on their Website (<http://www.aphis.usda.gov/ws>).

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This publication reports research involving pesticides. All uses of pesticides must be registered by appropriate State and/or Federal agencies before they can be recommended.

CAUTION: Pesticides can be injurious to humans, domestic animals, desirable plants, and fish or other wildlife--if they are not handled or applied properly. Use all pesticides selectively and carefully. Follow recommended practices for the disposal of surplus pesticides and pesticide containers.

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